

The Kimberley Pipit: a new African species

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The biology of African pipits *Anthus* is poorly known. For example, the incubation and fledging periods are known for only two of the eleven breeding species in Southern Africa. This lack of interest has been exacerbated by the confusion provoked by several recent changes in and conflicting opinions about the taxonomy of this genus in the major ornithological works covering pipits in the region (Clancey 1990, Keith *et al.* 1992, Voelker 1999a).

During investigations aimed at discovering the extent to which pipit taxa separated on morphological/behavioural grounds were also separable on the basis of their DNA, primarily to establish the validity of the Long-tailed Pipit *Anthus longicaudatus* (Liversidge 1996), DNA evidence suggested that one of the specimens examined was, in fact, a new taxon (Voelker 1999a). One of the freshly-collected specimens, from Kimberley, South Africa, had been identified as the Long-billed Pipit *Anthus similis*, but it proved to be a distinct species closer in relationship to the Malindi Pipit *A. melindae*, from coastal Kenya, than any other pipit (Voelker 1999a). Its DNA configuration was referred to as “*similis* (1)” in the text and cladogram by Voelker, whereas the established *Anthus similis* species was referred to as “*similis* (2).”

Referring back to the voucher specimen of *similis* (1) and comparing it with a series of *Anthus similis* loaned from the Bloemfontein National Museum, several differences were established between the two forms. Indeed, from the six specimens loaned it was found that one had also been misidentified and belonged to this new species, “*similis* (1)”.

Four years of fieldwork have allowed us to establish satisfactory differences that can be observed in the field, and to record courtship, song and nesting of the new species. Other specimens have been collected from the same locality as the original specimen. The new species can be identified, with difficulty, both in the hand and in the field, and we name it:

Kimberley Pipit *Anthus pseudosimilis*, sp.nov.

Holotype

McGregor Museum, Kimberley registration no. MMK/B/2548 adult male. 13 July 1995, Keeley Park (28° 45' S. 24° 47'E) Kimberley, South Africa. Collected by C.Anderson, B.Wilson and R.Liversidge. Skin, blood and tissue deposited at the McGregor Museum and blood at Burke Museum, Seattle.

Diagnosis

The holotype of the Kimberley Pipit was first identified as a Long-billed Pipit. However, its DNA profile differed from the latter species and we have now established that



Figure 1. The five larger streaked-backed pipits that occur in sub-equatorial Africa. Top left: Mountain Pipit *Anthus hoeschii*, which is darker and more heavily patterned. Middle left: Wood Pipit *Anthus nyassae*. Bottom left: the smaller African Pipit *Anthus cinnamomeus*. Top right: Kimberley Pipit *Anthus pseudosimilis*. Bottom right: Long-billed Pipit *Anthus similis*

there are morphological differences between these two very similar birds. The Kimberley Pipit is a streak-backed, streak-breasted, long-legged terrestrial pipit, with conspicuous superciliary stripe, buff or rufous patch on side of face, distinct black malar stripe and pale unmarked chin. Gape conspicuously yellow, sometimes orange-yellow, when feeding. Wing formula with P6-8 emarginated, and P5 markedly shorter than P6. Differs from geographically sympatric Buffy *A. vaalensis* and Plain-backed Pipits *A. leucophrys* in having streaked back and breast, from African Pipit *A. cinnamomeus* in having darker brown streaks on back, a more extensive breastband with generally heavier streaking, and by its larger size. Distinguished from very similar Long-billed Pipit by different wing formula and primary emargination, shorter bill, longer hind-claw, more distinct cream superciliary stripe, rufous ear coverts and black malar stripe, and also by behaviour and breeding biology (see below). Readily separable from geographically allopatric but genetically closely related Malindi Pipit which has heavier streaking on the back, thinner malar stripe and streaking on the belly and flanks.

Description of the holotype

Upper parts generally umber-brown, feathers with darker brown centre and paler edges forming a neat pattern on the crown and with broader dark centres on nape and mantle extending less noticeably onto back, scapulars and tail coverts. Supercilium distinct and pale creamy-buff, face with rufous ear-coverts streaked finely with buff and then buff below this. Paler moustachial stripe with dark thin line above extending from the ear coverts to meet the centre of the thin dark line of the lores at the mandible. Distinct dark brown malar stripe. Pale chin. Underparts pale buff with slightly darker chest band on which broad dark brown streaks extend across the chest. Remiges dark brown, edged narrowly buff, as are the greater and lesser wing coverts, with broader pale buff at the ends forming two pale bars. Underwing buff with paler base of remiges. Tail dark brown with very narrow buff edges. Outer tail feathers with noticeably white outer vane and inner terminal half. Dorsally the quill of the outer tail feather is very dark. Bill dark horn with pale yellowish at the base of lower mandible. Legs pale horn.

Paratypes

The following paratypes were collected at the same locality as the holotype in accordance with Article 72.1.2 of the International Code of Zoological Nomenclature (ICZN 1999). 1. MBM5735 adult male, 9 August 1998, Keeley Park (28°45' S 24° 47' E) Kimberley. Collected by G. Voelker and R. Liversidge. Skin and associated tissue (GAV1088) deposited at Barrick Museum of Natural History, University of Nevada, Las Vegas. 2. MBM5736 adult male, 9 August 1998. Keeley Park (28° 45' S. 24° 47' E), Kimberley. Collected by G. Voelker and R. Liversidge. Skin and associated tissue (GAV 1100) deposited at Barrick Museum of Natural History, University of Nevada, Las Vegas. 3. MBM5738 adult male, 9 August 1998, Keeley Park (28° 45' S 24° 47' E), Kimberley. Collected by G. Voelker and R. Liversidge. Skin and associated tissue

(GAV 1087) deposited at Barrick Museum of Natural History, University of Nevada, Las Vegas. 4. Collector's No. 1089. Adult male, 9 August 1998, Keeley Park (28° 45' S, 24° 47' E), Kimberley. Collected by G. Voelker and R. Liversidge. Skin deposited at The Natural History Museum, Tring, England (BM(NH) Reg. No. 2002.1.1); associated tissue (GAV 1089) deposited at the Barrick Museum of Natural History, University of Nevada, Las Vegas. 5. MBM5734 adult female, 9 August 1998, Benfontein Farm (28° 50' S 24° 50' E), 8 km east of Kimberley. Collected by G. Voelker and R. Liversidge. Skin and associated tissue (GAV1096) deposited at Barrick Museum of Natural History, University of Nevada, Las Vegas.

Table 1 lists 17 specimens considered to be Kimberley Pipits, mainly by virtue of their wing formula and Fig. 1 shows the Kimberley Pipit together with four other southern African streaked-backed pipits with which confusion is possible.

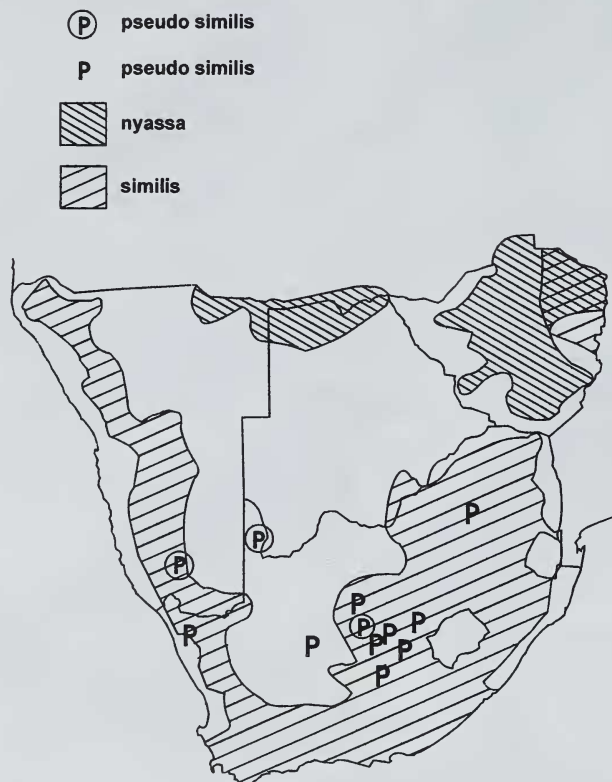


Figure 2. The known distribution of the Kimberley Pipit: P indicates the locations of specimens, P in a circle indicates the locations of confirmed sightings. The distributions of two species, *A. similis* and *A. nyassae*, that are and are possibly, respectively, sympatric with the Kimberley Pipit follow Harrison *et al.* (1997).

Paratype variation.

The ear coverts are variable in the amount of buff or browner colouration. The malar stripe is generally darker and more prominent than in the holotype, except in MBM 5738, which has a thinner stripe. MBM 5736 has buffy-tinged outermost rectrices, unlike the white outer rectrices of other paratypes and the holotype. BMNH 2002.1.1 and MBM 5736 have one or two (respectively) streaked undertail coverts.

Nest and eggs

Two nests have been found, one on 9 November 1998 with two eggs, which were broken by cattle before being measured, and the other with three chicks from 27 October to 11 November 1998. One had a roundish tunnel entrance into a low grass tuft, the tunnel being *c.* 15 cm long through grass to the nest cup. The second nest was very well concealed at grass roots level, deeply hidden under overhanging leaves and not visible from above.

The eggs have a pale bluish-white background with neat dark blobs widely dispersed.

Habitat

Generally found where the vegetation is short, usually < 15 cm but sometimes < 30 cm where there is also bare ground. The Kimberley Pipit has been observed by the authors in open grassveld, on open red Kalahari sandveld, karroid vegetation, panveld and open pan surrounds as well as limestone areas and dry river beds.

Distribution

The first specimens, identified by DNA, all came from Kimberley. The other specimens listed in Table 1 indicate a distribution from Namaqualand to Middelburg in the central karoo, through the Free State to Rustenberg in the old Transvaal (Fig. 2). There is a published photograph of one, labeled Long-billed Pipit, from Ais Ais in southwestern Namibia (Ginn *et al.* 1989, p.582). In addition, R.L. photographed one in the Kalahari National Park in May 1990 (photograph in R. Liversidge collection).

Status

Where it occurs, the Kimberley Pipit is fairly common. It appears to be sedentary but variations in numbers at particular sites, and variations in the plumage of individuals present at different times, suggest some winter movements from May to August.

Etymology

The vernacular name Kimberley Pipit is given because the types were identified from Kimberley. The specific name *pseudosimilis* was given because the first specimen identified by DNA had been misidentified as *similis*, from which it is difficult to differentiate morphologically.

TABLE 1
List of known specimens of *Anthus pseudosimilis*

Specimen number	Date collected	Locality collected	Latitude & longitude	Where deposited
MBM/5734	9.08.98	Benfontein	28°45'S 24°49'E	Barrick Mus., Univ. Nevada, Las Vegas
MBM/5735	9.08.98	Kimberley	28°45'S 24°47'E	"
MBM/5736	9.08.98	Kimberley	28°45'S 24°47'E	"
MBM/5738	9.08.98	Kimberley	28°45'S 24°47'E	"
BNM/00668	17.12.86	Warden OFS	27°49'S 28°58'E	National Mus., Bloemfontein
BNM/01454	27.08.97	Springfontein	30°17'S 26°44'E	"
BNM/01664	28.08.97	Springfontein	30°17'S 26°44'E	"
BNM/02245	24.09.96	Philipstown	30°16'S 25°17'E	"
BNM/03787	13.06.91	Trompsberg	30°03'S 25°07'E	"
BNM/05041	24.10.96	Middelburg	31°30'S 25°17'E	"
1905.12.20.34	20.12.05	Rustenberg	25°04'S 27°15'E	Nat.Hist. Mus., Tring
1905.12.29.1515	29.12.05	Klipfontein	29°13'S 17°40'E	"
1903.3.9.509	9.03.03	Deelfontein	30°59'S 23°48'E	"
1903.3.9.512	9.03.03	Deelfontein	30°59'S 23°48'E	"
1965.M.9004	1965	Middelburg	31°30'S 25°17'E	"
2002.1.1	9.08.98	Kimberley	28°45'S 24°47'E	"
MMK/2458	13.09.95	Kimberley	28°45'S 24°47'E	McGregor.Mus

Comparison with other species

In most of the Kimberley Pipit's known range, it is most likely to be confused with the Long-billed Pipit and it is therefore with this species that we make most comparisons below. Although genetically most closely related to the Malindi Pipit (Voelker 1999a) the Kimberley Pipit is easily separated by its larger size, less well-streaked chest, lack of streaks on flanks, and by the colour of the base of the bill, which is horn to yellowish, rather than bright yellow as found in *A. melindae*.

Plumage

Fig. 1 illustrates the five larger streaked-backed pipit species that occur in Africa south of the equator. Although not well shown in the illustration, the crown of the Kimberley Pipit often gives the impression of being neatly marked by its streaked pattern and this appears to be darker brown than the back (Fig. 3). The back feathers have darker centres and broad pale margins and these often form five or six lines down the back (Fig. 3).

Females are generally less distinctly marked, but overlap in plumage detail between male and female renders it difficult to sex individuals in the field with any confidence



Figure 3. Photographs of two Kimberley Pipits showing the various characteristics mentioned in the text. Note the distinctly streaked crown, broad pale margins to otherwise dark back feathers, lightly streaked breast, unstreaked flanks, and underparts generally paler than upperparts.

Both sexes of *A. pseudosimilis* have a distinct pale creamy-coloured stripe above the eye from the base of the bill to the back of the ear-coverts (Fig. 3). *A. similis* has a much less conspicuous eye-stripe in the Kimberley region. *A. pseudosimilis* has a distinct buff to rufous patch on side of face below the pale eye-stripe, covering the ear-coverts and extending down to the moustachial stripe (Fig. 3). This is more apparent on live birds than on study skins and is a good field characteristic. The rear of this rufous patch appears square-ended or merges with the side of the neck. There is frequently a distinct paler creamy line that curves upwards, a short distance below and posterior to the ear-coverts (Fig. 3). In breeding pairs, females have paler rufous ear coverts than males.

The *A. pseudosimilis* specimens have a distinct black malar stripe and this is noticeable in the field, where the male bird usually has a darker malar stripe than the female. Nine of ten *A. similis* specimens in the BMNH collection had no malar stripe, while the tenth had a less distinct one. One *A. similis* specimen (BMNH 1903.3.9.511) from Deelfontein had a malar stripe on its left side and nothing on the right side

The underparts are usually paler than the back. The chin is pale and unmarked; the chest usually has markings, sometimes forming a darker chest band, but is rarely heavily streaked; belly and flanks are pale and unmarked. First plumage birds and breeding males have distinct heavier markings on the chest. In contrast, the underparts of the Long-billed Pipits that occur in the Kimberley region are generally uniform and not paler than the back.

The pale areas of the outer-tail feathers vary in colour from buff to white in both *A. pseudosimilis* and *A. similis*, and in many other pipits, so that this is not a reliable species characteristic (but in *A. cinnamomeus* they are always white). There is also substantial variation in the pattern of the pale outer rectrix marking in *A. pseudosimilis* (Fig. 4), but rarely is the extent of pale marking as great as in *A. similis*, and this difference is apparent in the field when birds take off with the tail fanned.

Bare parts and morphometrics

The base of bill and legs of *A. pseudosimilis* are straw to flesh-coloured, as in *A. similis*. The gape of the Kimberley Pipit is conspicuously yellow inside, sometimes orange-yellow, when open and feeding. In *A. similis* the gape is flesh-coloured and inconspicuous. The culmen of male *A. pseudosimilis* is significantly shorter than that

TABLE 2.

The of biometrics of five male *Anthus pseudosimilis* and four male *A. similis* (insufficient females were available for comparison). Data are mean \pm I standard deviation (range).

Measurement	<i>A. pseudosimilis</i>	<i>A. similis</i>	t-test
Culmen	14.36 \pm 0.25 (14.2-14.8)	15.20 \pm 0.16 (15.0-15.4)	$t_7 = 5.75$, $P = 0.001$
Hind claw	12.20 \pm 0.75 (11.1-13.2)	9.30 \pm 0.48 (9.0-10.0)	$t_7 = 6.69$, $P < 0.001$
Tarsus	27.34 \pm 2.09 (26.0-31.0)	28.58 \pm 2.59 (26.0-32.0)	$t_7 = 0.79$, NS
Wing	97.20 \pm 2.59 (93.0-100.0)	95.50 \pm 7.19 (86.0-102.0)	$t_7 = 0.50$, NS
Mass	31.56 \pm 2.88 (28.0-35.2)	30.45 \pm 1.04 (29.8-32.0)	$t_7 = 0.73$, NS

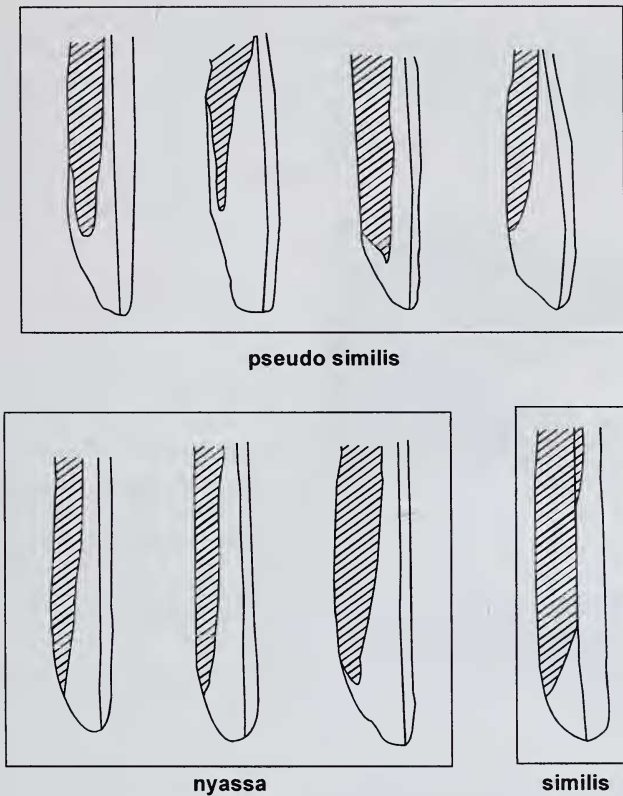


Figure 4. Diagrammatic illustration of the variation found in the pattern of the outer tail feathers of the Kimberley Pipit, compared with those of the Long-billed Pipit and the northern Wood Pipit.

of the Southern African forms of *A. similis* (Table 2). The name “Long-billed” Pipit applies to the nominate subspecies from India and is a misnomer for African birds, in which the bill is shorter and similar to that of other African species.

The 5th primary (P5) is noticeably shorter than P6 and this is a reliable diagnostic feature with *A. pseudosimilis* in the hand. In all *A. similis* specimens in the collection at the Natural History Museum, Tring, except one from Sudan, P5 and P6 are similar in length.

The tertiaries of *A. pseudosimilis* extend to P4/P5, whereas in *A. similis* they extend to only P5/P6. In *A. pseudosimilis* P8, P7 and P6 have emarginated outer webs (Fig. 5), while in *A. similis* four primaries, P8, P7, P6 and P5, are emarginated (Keith *et al.* 1992, Clancey 1990).

The hind claw of male *A. pseudosimilis* is significantly longer than in male *A. similis* (Table 2).

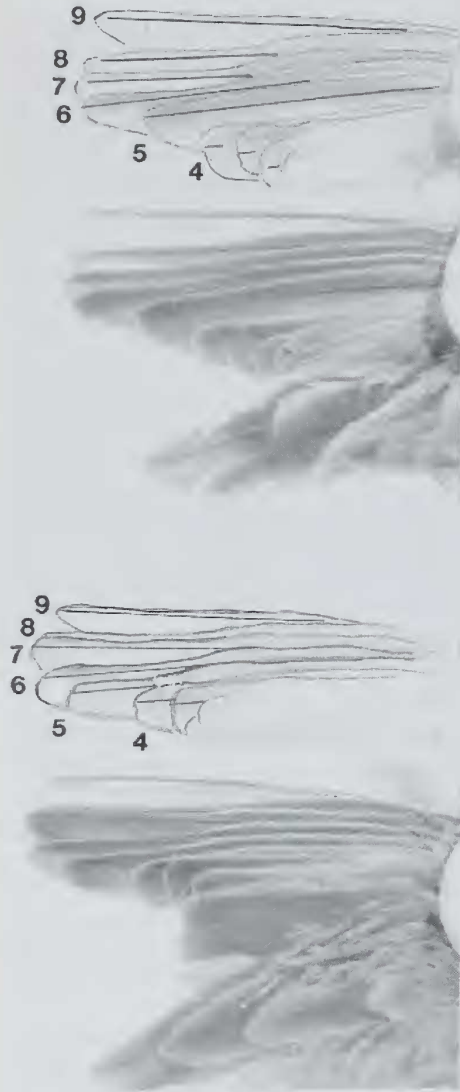


Figure 5. Open wings of a Kimberley Pipit (NMB 05041, above) and Long-billed Pipit (NMB 03429, below), with drawings of these to show the differences in wing formula and primary emargination described in the text.

Kimberley Pipits and Long-billed Pipits do not differ in wing length, tarsus length or body mass (Table 2) but in the field the former appear longer-legged and smaller, as does the Malindi pipit (Keith *et al.* 1992).

Habitat

The Kimberley and Long-billed Pipits occupy different habitats, the former occurring on plains and grassveld and the latter on boulder-strewn hillsides with trees. The

Wood Pipit *A. nyassae*, which on present knowledge is also allopatric with both Kimberley and Long-billed Pipits, occurs in open savanna with tall grasses and trees. The commonest and most widespread pipit in southern Africa is the smaller African Pipit *A. cinnamomeus* which prefers shorter open grasslands devoid of trees and often near water or other moist areas. The Mountain Pipit *A. hoeschii* occurs in the Kimberley area as a rare passage migrant on calcrete with short grasses (*Sporobolus*) and karooid short hardy shrubs.

Behaviour

Pipits feed on the ground with short runs followed by a stop, when they may peck at food and/or move their tails. The Kimberley Pipit usually crouches when pecking. Both the number of paces taken between stops and the manner the tail is moved by each species of pipit can vary in a characteristic manner.

The number of steps taken by birds between stops and the number of tail flicks made were quantified using a digital video camera that could be slowed down 30 times. The footage obtained covered 209 seconds for *A. pseudosimilis*, relating to 21 separate observation periods of at least three individuals, and 300 seconds for *A. similis*, involving nine separate observation periods of one individual. The Kimberley Pipit takes more steps between stops than the Long-billed Pipit (Median 5.00, range 1-16, for Kimberley Pipit, n of stops = 119; median 3.00, range 1-9, for Long-billed Pipit, n = 65, Mann-Whitney W = 13027, P < 0.001). During these observation periods, Kimberley Pipits made 68 tails flicks while Long-billed Pipits made 6 ($\chi_1^2 = 66.9$, P < 0.001), indicating that the former flick their tails much more frequently when moving.

Kimberley Pipits are usually seen on the ground, less often perched on a tuft of grass. When alarmed they may perch on fences or telephone wires but have not been seen to perch on bushes or trees. By contrast, Long-billed Pipits are rarely seen on the ground except when feeding; they normally perch in prominent positions on thin branches on tops of trees or bushes, or on boulders. During feeding bouts on the ground they often hop onto rocks to look around. When disturbed from the ground, Wood Pipits fly up into a tree and settle on an exposed thick branch, often running along it. Unlike Long-billed Pipits, Wood Pipits utilise branches that confer good all-round vision, without themselves being conspicuous.

Horizontal flight of *A. pseudosimilis* and *A. similis* is undulating but not exaggerated. However, the dips of *A. similis* appear to be slightly greater, possibly because its tail is slightly longer and held more widely fanned. In courtship or territorial flight the Kimberley Pipit rises with a fluttering flight to 20 - 30 m, sometimes > 50 m, and then, during descending loops c. 70° off the horizontal, it calls in each loop with both head and tail held above the horizontal. This is similar in description to the song flight of the Olive-backed Pipit *A. hodgsoni* (Cramp 1988). In contrast, the Long-billed Pipit calls mainly from a tree or boulder but may take off from such a perch with a fluttering flight, ascending a short distance and calling at the same time (R.L. pers.obs).

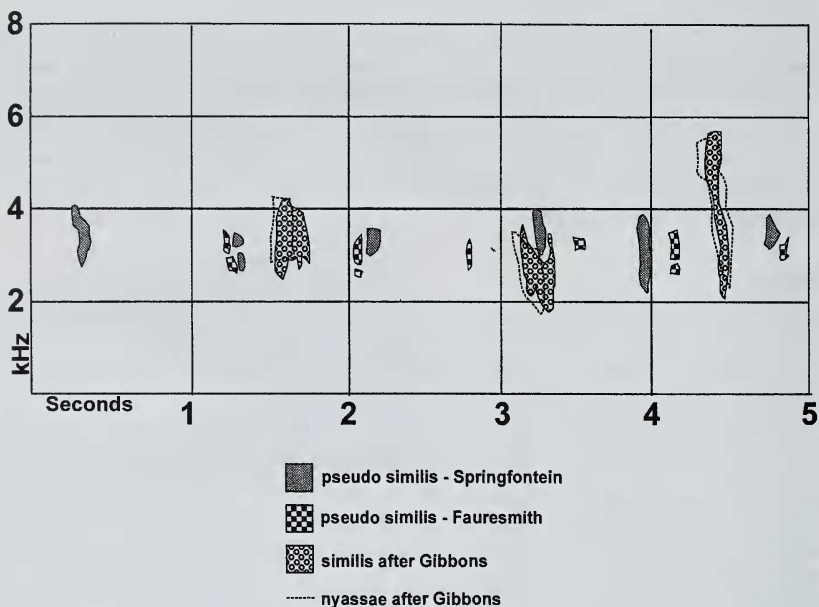


Figure 6. Diagrammatic representation of sonograms of the songs of the Kimberley and Long-billed Pipits, together with the song of the Wood Pipit, superimposed upon each other. Despite the similarity of the songs, the descending notes of the Kimberley Pipit are discernible and contrast with the more similar notes of the Long-billed Pipit.

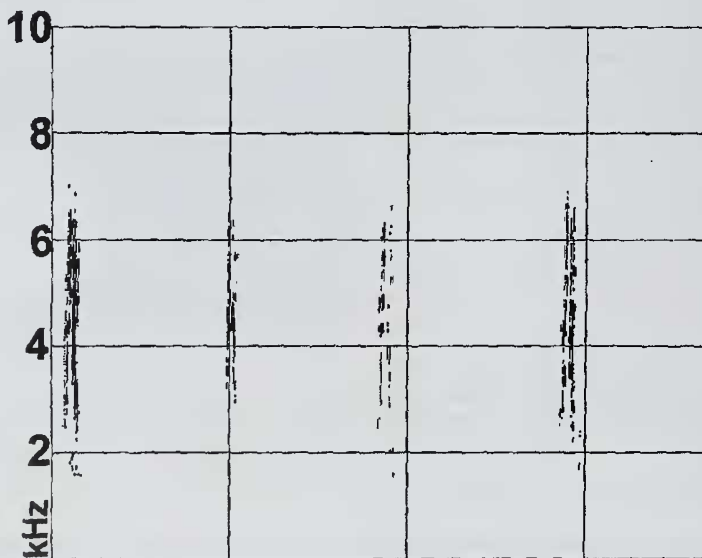


Figure 7. Sonograms of the flight calls of three individual Kimberley Pipits.

Vocalization

The song of *A. pseudosimilis* is usually given in flight and consists of three deepish notes “chreep-choop-chreep”, in a descending series (Fig. 6), often repeated during courtship. The song of *A. similis* usually consists of three notes, rarely two, of similar timbre but is most often uttered from a perch in a tree or on a boulder, and the three notes are always at the same pitch. Flight calls (Fig. 7) are usually single but two or three notes may be produced; on rare occasions both species may give three notes in horizontal flight when disturbed.

Nest and eggs

Most pipits conceal their nests in depressions on the ground or at the base of some shelter such as a tuft of grass or a rock. Of the two Kimberley Pipit nests so far discovered, one had a roundish *c.* 15 cm tunnel entrance through grass to the nest cup in a low grass-tuft. The second nest was very well concealed at grass roots level, deeply hidden under overhanging leaves and not visible from above. Only two other pipit species appear to have such well covered nests: Nilgiri Pipit *Anthus nilghiriensis* from India which “conceals its nest on some bank well concealed by grass” (Ali & Ripley 1973), and Yellowish Pipit *A. lutescens* from South America, which also has a short tunnel entrance to a nest concealed in a large, isolated grass tuft in pasture (GV



Figure 8. Nest and eggs of the Kimberley Pipit. Covering grass was held back to allow photography. Note that the bluish background colour of the eggs, described in the text, is not clear from this photograph.

pers. obs.). The Long-billed Pipit usually nests “on a slope and situated against the underside of a sloping rock”, whilst the Wood Pipit sites its nest “into a shallow scrape or hollow against the side of a grass tuft” (Tarboton 2001).

The eggs of the Kimberley Pipit have a pale bluish-white background with neat dark blobs all over (Fig. 8). In contrast the eggs of the Long-billed Pipit are densely marked by fine lines forming a greyish background (well illustrated in Priest 1948). All southern African Long-billed Pipits eggs that have been examined are similar. The two Kimberley Pipit eggs were more rounded, less pointed at the small end than those of *A. similis* and appeared smaller. The eggs of the Wood Pipit are described (Maj.J.F.R. Colbrook-Robjent, pers.comm.) as very similar to those in the photograph of the Kimberley Pipit nest.

Nestling Kimberley Pipits are much darker brown than adults, with the back feathers showing a fine light cream margin giving a scaly appearance. The fledgling Long-billed Pipit has a broader buff-brown edge to its dorsal feathers (de Swardt 2001). The face, chin and chest do not show the darker head markings that characterize the fledgling Plain-backed Pipit *Anthus leucophrys* or the Buffy Pipit *A. vaalensis*.

Discussion

The taxonomy of the Afrotropical pipits remains confused despite two recent taxonomic reviews (Clancey 1990, Keith *et al.* 1992) and subsequent examination of the DNA profiles of all but three of the species currently recognised (Voelker 1999b). The confusion stems from mis-identification of specimens, different techniques of describing wing formulae, different applications of species limits, and the recent recognition of new taxa. Furthermore, genetic studies have shown that morphological similarity does not necessarily imply relatedness. For example, we now know that there is no foundation for Hall & Moreau's (1970) “super-species” that brought all the larger plain-backed pipits together. Adaptation to sometimes subtly different habitats seems to have led to convergent evolution of morphological characteristics. This is also exemplified by the demonstration here that two morphologically very similar forms, *A. pseudosimilis* and *A. similis*, are not closely related and comprise two species of which the former is new to science.

Following the demonstration, through genetic studies (Voelker 1999a), that two species are involved, we have sought morphological, behavioural and ecological features that permit the separation of these two taxa in the hand and in the field. Through comparisons of the six specimens that comprise the type series, and known from their DNA profiles to represent the new species, with specimens of *A. similis* we conclude that wing formulae and emargination and culmen and hind claw length are reliable characteristics for the separation of the two taxa. They are also separated by habitat preferences, nest site characteristics and possibly egg colour and pattern, although examination of more clutches of *A. pseudosimilis* is needed to ascertain variability within this species. There are also differences in behaviour, with Kimberley Pipits taking more steps between stops, and making more frequent tails flicks, than Long-billed Pipits.

Taxonomic considerations

Voelker (1999a) suggested that, based on DNA analysis, the holotype of *A. pseudosimilis* was most closely related to *A. melindae*. Subsequent analysis of 590 bp of cytochrome b, from all other *pseudosimilis* specimens detailed in this paper, provided a confused picture of relationships, in that two *pseudosimilis* (GAV 1089, GAV 1100) appear to share the mtDNA of *Anthus leucophrys*, while the remaining three specimens share the mtDNA of *A. cinnamomeus*. Sequence divergence between the two groups of hybrids is 5-6%, suggesting that divergence occurred roughly 2.5 million years BP. This evidence of shared mtDNA among three species of pipits implies that hybridisation among southern African pipits is, or has been in the past, quite common. This is not particularly surprising, nor does it mean that *pseudosimilis* is not a valid species; hybridization often occurs between avian species (Grant & Grant 1990), and as such is not an obstacle to recognizing valid taxa (Zink & McKittrick 1995). Indeed, recent studies have shown that females of one species can actually prefer and mate with males of another species (e.g., Rohwer & Wood 1998; Pearson & Rohwer 1998; Pearson & Manuwal 2000, Thor Veen *et al.* 2001, Hasselquist 2001). Thus, hybridization and/or clear genetic evidence of monophyly is not necessarily a barrier to recognising valid species; note also that a lack of genetic evidence for monophyly has not precluded the recent recognition of avian species (e.g., Eames & Eames 2001, Johnson & Jones 2001).

Our contention then is that *pseudosimilis* is best recognized as sister to *melindae*, and that the probable past hybridization does not invalidate *pseudosimilis*, for the following reasons. First, the morphological and behavioural differences described above clearly support the identification of a new pipit species; the nest architecture alone clearly sets this taxon apart from all other African *Anthus* taxa. Second, although we found hybridisation between *pseudosimilis* and *cinnamomeus*, the hybrids are clearly different from any recognized race of *cinnamomeus* based on a number of morphological and behavioural characters (Clancey 1990, Keith *et al.* 1992). Third, although we found hybridization between *pseudosimilis* and *leucophrys*, the well-defined streaks both on the breast and back of *pseudosimilis* clearly show that the genetic hybrids are not conspecific with *leucophrys*, which has no streaking in either body region.

We feel confident of our designation of *Anthus pseudosimilis* as a new species which is quite distinct from any other pipit. It has been separated from its apparent nearest relative, *Anthus melindae* (from coastal Kenya) on the basis of DNA comparisons, for about 2.5 million years (Voelker 1999a). This type of sister-distribution (assuming a more southerly distribution for *pseudosimilis*) is part of a larger pattern within *Anthus* (Voelker 1999b). Indeed the 86 bird species listed by Moreau (1966) that indicate the ancient link of the arid-corridor from the north east horn of Africa to the Kalahari probably provides the strongest supporting evidence of such separations.

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Eleven new sub-species of babbler (Passeriformes: Timaliinae) from Kon Tum Province, Vietnam

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The BirdLife International Vietnam Programme, in collaboration with the Forest Inventory and Planning Institute (FIPI), recently completed a project to identify and incorporate terrestrial forest sites of international importance for biodiversity conservation within a revised system of protected areas. During spring 1996, 1998 and 1999, BirdLife and FIPI teams undertook preliminary ornithological exploration of hitherto unexplored high mountains in the Central Highlands of southern Vietnam, as part of management planning activities for the establishment of three new nature reserves, in Kon Tum, Gia Lai and Quang Nam Provinces (Fig. 1) (Le Trong Trai *et al.* 1999, Le Trong Trai *et al.* 2000, Tordoff *et al.* 2000). In 1996 and 1998, BirdLife and FIPI field activities were focused on the southerly aspect of Mt Ngoc Linh in northern Kon Tum Province. Rising to 2,598 m asl, Mt Ngoc Linh (15°04'N, 107°59'E) is the dominant landscape feature and the highest peak in the Central Highlands. In spring 1999, a BirdLife/FIPI team investigated Mt Kon Ka Kinh (14°19'N, 108°24'E), 1,748 m asl, one of the highest peaks in the massif and 95 km SE of Mt Ngoc Linh. Also in